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ABSTRACT

Suggestions for evaluating experiential learning programs, especially the effects of various forms of experiential learning on different types of learners, are discussed. Evaluation designs currently in use involve a four-tier hierarchy: (1) participant responses; (2) use of measurement instruments; (3) attribution of measurable effects to a particular program; and (4) attribution of particular effects to various properties of a program. The author believes there has been little success in tiers three and four of the hierarchy. Recommendations for future evaluation studies at level four are proposed, including the development of measurement instruments and research design. Types of needed measurement instruments include developmental interviews and direct observations of behavior. Research design recommendations apply to programs with specific objectives, and include use of pilot programs, contrived experiments in which programs are specifically developed for evaluation purposes, and researcher-program staff cooperation to plan programs which can be evaluated experimentally. Questions to be addressed in developing the research design concern learner characteristics and school performance, and whether students are participating in adult-directed activities, or in student directed programs in order to achieve student-initiated goals. (MH)

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Evaluating Experiential Learning Programs

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Abstract

Experiential learning has been highly recommended and some descriptive accounts of programs have been written, but there is a paucity of well-designed research. A critical review of evaluations of such programs as citizenship camps, Outward Bound, and Experience Based Career Education demonstrate a need for more appropriate instruments and more powerful designs. Systematic observation and developmental interviews are recommended for future studies with the use of natural and contrived experiments to assess the varying effects of specific program features on different students.

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Introduction

Recent recommendations for the reform of secondary schooling have called for more opportunities for youth to learn by participating in community activities (National Commission on the Reform of Secondary Education, 1973; Panel on Youth of the President's Science Advisory Committee, 1974; Task Force '74, 1975; National Panel on High School and Adolescent Education, 1976; National Task Force on Citizenship Education, 1977). Brief descriptions of such programs are available (National Commission on Resources for Youth, 1974; National Association of Secondary School Principals, 1974) and some excellent case studies have been written by program staff (Arms and Denman, 1975; Wigginton, 1975). But there is a paucity of well-designed research on educational programs of this kind.

I shall address the question of how experiential learning programs might be studied, focussing specifically on the evaluation of program effects. Research, including evaluation research, might productively be conducted on experiential learning for many purposes. But assessing the impact of experiential learning programs is a critical purpose if those programs are to be widely understood and accepted.

The measurement of educational effects is complex and controversial in conventional classrooms. Doyle (1978), one of the many critics of the simple input/output or process/product model of evaluating educational programs, suggested that it may be more useful to ask how educational programs have effects than what their effects are. This recasting of the question, however, does not eliminate the question of what the outcomes are. I agree strongly with the idea that educational programs need to be understood as more than "black boxes" and further urge the use of an ecological perspective in assessing their effects. An ecological perspective encompasses both the complexity of human interaction in the learning setting and the influences of larger contexts in

which those settings are embedded (Bronfenbrenner and Hamilton, 1978).

Nevertheless, attempting to measure the effects of an educational program is a very important part of understanding that program. Experiential learning programs are even more difficult to assess in terms of effects than classrooms because one of their key features is learner control over the content and conditions of learning. The result is frequently a greater variety of activities and a wider range of outcomes within a single program than is found within most classrooms. This point will be elaborated further in recommendations for future research.

A Working Definition

In this paper, "experiential learning" will refer to educational programs functioning outside of conventional school classrooms that place participants in responsible roles and engage them in cooperative, goal-directed activities with other youth, with adults, or both. It is synonymous or closely related to such terms as "action learning" (National Association of Secondary School Principals Bulletin, 1972), "youth participation" (Heyneman and Thomas, 1977) "youth involvement" (Weber and Custer, 1970), and "work experience" (Searcy, 1973).

A working definition is needed because "experiential learning" is a redundant expression. All learning, as Dewey pointed out, is rooted in experience. The experience may be hearing a lecture, reading a book, painting a picture, or campaigning for a mayoral candidate, but there can be no learning without experience. There can, however, be activity without learning; hence the need for attention to the conditions under which experience is educational. Dewey explicated those conditions admirably in Experience and Education (1938).

The definition adopted here includes what the Council for the Advancement of Experiential Learning (CAEL) calls "sponsored" experiential learning. Much learning, perhaps the most important learning, is acquired through daily life, without planning, sponsorship, or even the conscious intention of one person to

learn or another to teach. Learning is also acquired through communications media, informal educational institutions such as libraries, adult education programs, churches and job training programs, and from one person teaching another what he or she has learned about golfing or collecting stamps, about precision lathe operation or surviving in a bureaucracy. But the concern of this paper will be with planned opportunities for learning outside the classroom.

In addition to limiting the use of the term, "experiential learning," to nonclassroom educational programs, this definition includes only programs in which participants learn by doing something with or for others. What they do may be in the form of volunteer service, as described by Conrad (1974), but it can also be in the form of work performed in a business or agency, sometimes for pay, as in the programs reviewed by Walther (1976), or in the form of internships, community studies, information sharing, and political advocacy as outlined by Newmann, Bertocci, and Landsness (1977). The key is that learning is acquired through social activities, often directed toward external goals in additon to the education of participants.

I should make clear that I do not believe the term, "experiential learning" should always be restricted to learning acquired through out-of-classroom programs involving extensive personal interaction. These limitations are placed on the contexts and purposes of experiential learning to set boundaries around the issues discussed in this paper. Another boundary is that the learners of interest are youth of secondary school age.

Levels of Measurement

The question, "How can the effects of experiential learning be measured?" has several answers that can be ordered in a hierarchy according to the difficulty of obtaining the answer and the utility of the answer. Unfortunately, there is a positive association between difficulty and utility. The hierarchy can be represented by a series of more specific questions:

(1) Do participants say they have been affected?

(2) Is there other evidence of effects?

(3) Is there evidence that the program was responsible for the effects?

(4) What about the program was responsible for the effects?

Participants' responses are an important source of data regarding the effects of experiential learning programs. Rippey (1973) has edited a useful set of essays on the collection and use of data on participant perceptions. In the absence of harmful effects and assuming the availability of resources, the enthusiasm of youth, teachers, parents, and citizens should be sufficient reason for implementing experiential learning programs. Indeed, such enthusiasm is one of the strongest testimonials to the benefits of experiential learning. It is a consistent characteristic of experiential learning programs that those who are close to them believe they are effective. Trow (1971) has argued that educational innovation should be encouraged precisely because it generates "Hawthorne effects." If innovation is no more costly than conventional programs, this argument is persuasive.

But participant responses are not an adequate empirical basis either for program designers who must try to develop optimum experiential learning programs or for policy makers who must choose among competing educational approaches in allocating limited resources. Sheirer (1978) has used social psychological theory and research to account for the tendency of those close to innovative programs to evaluate them favorably. Her line of argument has merit and serves as a needed warning to evaluators of experiential learning, but it ignores the possibility that evaluation instruments and methods are insufficiently sensitive to corroborate the beneficial effects claimed by participants and underestimates the ability of ordinary people to judge what is best for them. Positive feelings of participants should be taken seriously, but then cannot be relied upon exclusively.

Riecken (1952), whose study is reviewed below, found an opposite tendency

in program participants, which he also accounted for by citing social psychological theory. Participants in Volunteer Work Camps underestimated the impact the experience had had on them if their statements in interviews at the end of the program are compared to changes measured by several instruments. Furthermore, the ones who said they liked the program the most were not the ones who showed the greatest change as measured by those instruments. This finding, replicated by Dentler (1959), can be explained by the need people have to reconcile new beliefs with long-standing perceptions of themselves and by the power of discomfort as a force for change (Festinger, 1957). Whether participants over or underestimate a program's impact, the value of their opinions is bounded. Their opinions are useful but not sufficient.

The second level, evidence of effects from sources other than participant testimony, can be dealt with in a number of ways. The most common is the use of measurement instruments, usually printed forms, eliciting "before and after" responses from participants that indicate changes in attitudes, opinions, or knowledge related to the program. Teachers, parents, and others close to participants can also be asked for their perceptions of how a program has affected participants. Experts, however qualified, can be asked to evaluate either the program as a whole or the work of individual participants, and they may perform those evaluations on the basis of either systematic or impressionistic evidence or both.

Within this second level there is room for a wide range of methods for gathering evidence on program effects, from totally inadequate to highly sophisticated. In fact, much of the literature on evaluation research and on tests and measurements may be located within this arena. I have intentionally lumped these multifarious concerns together to emphasize what has been left out.

Validity and reliability, the major concerns about all forms of measurement, are the chief problems at this level. I shall argue below that the kinds

of instruments that have been commonly used to measure effects of experiential learning programs have been unsatisfactory. The best strategy for dealing with validity and reliability is what Webb, Campbell, Schwartz, and Sechrest (1966) called "triangulation," the use of more than one measure of the same phenomenon. Thus, a participant's opinion, the testimony of a teacher, and a score on a standard measure are much more powerful evidence of program effects if they agree than if they are taken separately. The use of more than one "objective" measure adds even more power to such a finding.

The third level of measurement, evidence for attributing measured effects to a program, involves the design of evaluation studies. Campbell and Stanley (1963) provided the standard source of questions to ask of any assertion that a particular treatment is responsible for a measured outcome. They also made a powerful argument for experimental or "quasi-experimental" designs for studies of educational programs. I shall recommend the use of experimental designs, but for somewhat different reasons. The main point to be made here is that simply measuring some sort of change among program participants provides no basis for inferring that the change resulted from participation in the program. It is also necessary to compare program participants with nonparticipants using the same measures.

The fourth level, attribution of particular effects to properties of a program, is both the most useful and the most difficult to achieve. It entails comparisons of the effects of experiential learning programs that are different from each other in identifiable ways. As with level three, experimental designs are needed, but to deal with level four, those designs must not only compare participants and nonparticipants, they must also compare participants in different programs. Instead of just a treatment/nontreatment comparison, the treatment group must also be compared with groups receiving alternative treatments. Those alternatives may be quite different experiential learning programs, if the question of interest is the effects of a particular type of program, or the same

basic program with particular features systematically varied if the question is what aspect of a particular type of program is associated with specific effects.

As I shall illustrate below by describing some studies of experiential learning programs, level three is as high as almost any have aimed and most fall lower on this scale. The result is that there is little that can be said with assurance about the effects of experiential learning. Following the review of some studies, I shall recommend steps for improving the quality of research on experiential learning.

First, though, I should point out that the low state of research on experiential learning is not an aberrant condition resulting from the relative novelty of the topic or the ineptness of those who have conducted research in the area. The field of educational evaluation is unsettled and undeveloped, with much disagreement about basic paradigms, theories, designs, and methods. Even in areas where there is a long tradition of research, more conflict is visible than consensus. Nor is this situation limited to educational evaluation. Evaluation research is a newly identified specialty in the social sciences. A rash of new books and journals has attempted to define the field more clearly, but they demonstrate the same condition of dissensus on the most basic issues that characterizes educational research, including educational evaluation (House, 1978).

Moreover, the problem cannot be attributed only to the current state of evaluation research. Social science is not so advanced that it has given evaluation researchers a powerful set of theories and methods to use in their work. Dissensus is the rule in this larger sphere too. Dissensus by itself is not a sign of the weakness of a science. But consensus on some of the fundamentals is required before widely useful findings can be expected. High energy physicists disagree strongly on the composition of the atom, but they agree that it is an important question to ask and they can agree on the sorts of evidence that would disprove one theory or another. Social science has not achieved the elegance or power of even Newtonian physics, nor is it likely to. The phenomena of human

thinking and behavior are far more complex than those investigated by physical and natural scientists. Social science cannot be expected to generate a technology for understanding and influencing human beings equivalent to that attained in the physical world.

The recommendations I shall make concerning research on experiential learning, therefore, are not aimed at answering all or even most of the basic questions involved. Rather they are my judgments about what issues are most crucial to the design of experiential learning programs and most likely to repay the kind of research that is possible within the limitations noted above. My criticism of previous studies is offered constructively and in the knowledge that ideal studies are beyond our grasp. That should not prevent our striving for the ideal.

Two types of experiential learning programs have been studied relatively extensively, one type having as its chief purpose citizenship or character education, the other, work experience or career education. These will be treated in some detail because the relative similarity of programs and evaluation procedures provides some comparability and because they represent the best studies I have been able to locate.

Evaluations of Citizenship Education/Character Development Programs

"Character development" has an archaic ring to it. Contemporary educators and evaluators tend to use terms like "self-concept" and "values clarification" instead, but the idea is the same, to instill in young people predispositions to think and act in ways that are seen as beneficial to themselves and to society. Citizenship education is closely related; its emphasis is more on societal than personal benefits.

Riecken (1952) and Hyman, Wright, and Hopkins (1962) evaluated rather similar programs of citizenship education/character development operating in 1948 and 1955-59 respectively. Both involved college students in full-time summer experiences designed to strengthen their liberal/humanitarian attitudes and behaviors.

The Volunteer Work Camps were sponsored by the American Friends Service Committee and offered mostly middle class youth a chance to undertake constructive physical labor in an economically deprived community in an atmosphere of intense discussion and communal interaction. The Encampment for Citizenship was much more of an educational than a service experience, but shared with the work camps the intentional immersion of "campers" in a democratically organized communal living experience.

The two studies have a great deal in common in addition to the similarity of the programs being evaluated. Both dealt rather well with the first three levels identified above for evaluating the effects of experiential learning: participant responses, other measures of effects, and evidence that the programs were responsible for the effects. Their findings too were rather similar. The stated objectives of the two programs were found to be achieved for the most part. Participants generally approved of the programs. Changes in several relevant attitudes were significant and substantial according to different measures administered at the beginning and the end of camp, and, what is more, persisted through a six-week follow-up in the Hyman study and a ten-month follow-up by Riecken. In addition, data on behavior demonstrated that campers' new attitudes were acted on during the camp experience and afterward.

Hyman and his colleagues demonstrated the camp experience's role in achieving these effects by gathering comparable data for four different groups of campers, by surveying campers from previous years, and by administering the pretest twice to one group before they participated in order to show that little change occurred over a six-week period when the camp was not being attended. Riecken used a comparison group only to establish that the volunteer work campers were decidedly more liberal than most college students before they participated.

Four aspects of these two studies are particularly noteworthy. First, the measures employed, though primarily paper-and-pencil attitudes questionnaires, were numerous and varied. The findings must be taken more seriously because

they were corroborated by different instruments. Second, both studies examined not only the aggregate effects of the programs but also differential effects on various subgroups, including males and females and those differing in their pre-test attitude profiles and expectations for the camp and in their post-camp assessments of the experience. Third, both evaluations included detailed descriptions of the experience and at least speculative efforts to relate the measured effects to the properties of the camps. Fourth, the designs of the two studies, particularly the post-camp follow-up, and the sample sizes, were quite sound, their biggest weakness being lack of control groups, a weakness discussed in detail by Hyman, Wright, and Hopkins (pp. 17-29).

It is ironic that these two studies, the earliest I have found, are the best. Three limitations, though, should be kept in mind. Both studies examined programs that attracted a very special group of college students who already possessed the kinds of attitudes the camps were designed to instill. What the camps did, then, was to reinforce and extend predispositions that were already present in large measure. This is not a trivial accomplishment, but it is not the same as making drastic changes in people. The second limitation on the generalization of these findings is that the experiences were extremely intense. Spending 24 hours a day over most of the summer in such a special environment could be expected to have more dramatic effects than participating in similar activities at a more relaxed pace. Third, although the attitude measures employed were supported by various behavioral measures, they are not the strongest measures of effect. Hartshorne and May (1928) tested the assumption that attitudes as measured by such instruments are closely related to behavior and found it unsupported. The burden of proof is on those employing the instruments. Both studies gave evidence that the attitude measures had behavioral implications, but neither used measures of behavior as sophisticated as those used for attitudes.

Outward Bound is a more recent character education program, though the term

is not used by its proponents. It shares with the Volunteer Work Camps and Encampment for Citizenship the feature of placing young people, primarily but not exclusively secondary school-age youth, in an intensive communal experience, full-time, for some weeks. The activities involve survival in various wilderness settings, especially mountains and the seashore. They are intended to make youth more self-confident and better able to work cooperatively. It lacks the aspect of performing work that benefits people outside the group of learners that characterized the Volunteer Work Camps. The importance to the Outward Bound experience of interactions within the participant group under stressful conditions qualifies it as experiential learning according to the working definition adopted above.

A number of studies have been reported of programs conducted in different years at various locations. Godfrey (1974) reviewed a number of those studies and noted their weaknesses. Different instruments have been employed to measure changes in, for example, self-concept, fate control, values, and stability, and statistically significant changes in a positive direction have consistently been found. Some confidence, therefore, can be given to the claim that Outward Bound has an impact on the feelings of its participants as measured by paper-and-pencil instruments. Kelly and Baer (1971) found that recidivism of adjudicated minors who went through an Outward Bound experience was 20% while it was 40% statewide, suggesting that some behavior change might accompany the internal changes found in other studies. Wetmore's (1972) finding that instructor's ratings of participants' behavior with Kelly and Baer's Behavior Rating Scale corresponded to measured self-concept reinforces the link between internal changes and behavior.

Wetmore found no relationship between participants' socioeconomic status, race, and other background variables and self-concept changes, which with Kelly and Baer's study of delinquents, suggests that Outward Bound's effects are not limited to particular types of youth.

Wetmore found that the self-concept scores measured in his sample six months after the program ended did not decline from the levels measured at the end of the program. A more recent study by Nye (1976) employed a comparison group to demonstrate that changes in self-concept did not occur in youth not participating in Outward Bound. His three-month follow-up showed that gains were maintained when participants returned home. However, he found that instructors were unable to identify self-concept changes in participants on the basis of their knowledge of participants' behavior.

Although these studies did not, for the most part, use control or comparison groups, the consistency of their findings is evidence that the Outward Bound program was responsible for the effects, bearing on the third question in the evaluation hierarchy presented above. Their chief weakness is at the second level, providing convincing evidence of effects. Although it is clear that Outward Bound does something to participants, its value cannot be established solely on the basis of paper-and-pencil measures of internal states. Self-concept, probably the most used outcome measure of Outward Bound programs, has been shown to be related to important behavior, notably academic achievement (Brookover, et al. 1964; 1965, 1967) and delinquency (Reckless, Dinitz, and Murray, 1956). But a review by Scheirer and Kraut (n.d.) of intervention studies designed to improve educational achievement by increasing self-concept found no convincing evidence that improved academic performance followed increased self-concept, casting doubt on the behavioral consequences of self-concept change.

Wetmore (1972) and Kelly and Baer (1969, 1971) did the best studies of Outward Bound and they are not as sound as Riecken's (1952) or Hyman, Wright, and Hopkins' (1962) studies of programs with similar purposes.

Evaluations of Work Experience/Career Education Programs

Although many work experience programs for youth, such as Neighborhood Youth Corps (now absorbed by CETA, the Comprehensive Employment and Training Act) and Job Corps, have income transfer as a major goal, they can also be viewed as

forms of experiential learning. Searcy (1973) and Walther (1976) expressed this view. Walther, in reviewing a wide range of programs sponsored by the Department of Labor, concluded that the most valuable potential outcomes of work experience programs were "coping skills," such as self-management, problem solving ability, cognitive flexibility, and ability to deal with conflicts and with authority (pp. 65-69). Walther contrasted the goal of improving these rather general coping skills with the goal of teaching specific job-related skills such as how to operate specialized machinery, and claimed that employers are more interested in dependable workers who can be taught specific skills than in technically trained workers who are hard to supervise.

Generalization about the results of Job Corps and Neighborhood Youth Corps is difficult for two reasons. Participants are selected because of the severity of their needs. The potential for showing strong positive effects, therefore, is minimized. The youth who need such programs most are hindered by a multitude of forces from achieving the programs' objectives, which center on finding and keeping productive and remunerative employment. It is difficult to fault a program that lasts a few months for failing to overcome the cumulative and continuing effects of racial discrimination, economic deprivation, poor school achievement, unstable homes, and unsupportive communities. Despite such obstacles, some participants appear to benefit dramatically from such programs and some programs seem much more effective than others.

A second difficulty in generalizing about the programs is that aggregating results obscures the achievements of some participants and some programs. Sufficient resources have not yet been allocated to the evaluation of these programs to determine whether certain classes of participants and specific programs or types of programs consistently outperform the others. Evaluations, that is to say, have not yet dealt with the fourth level questions involving program variations and alternative treatments.

For that matter, evidence on the existence of program effects, levels two

and three, is not clear-cut. Levitan and Johnston (1975) reported that surveys of Job Corps participants revealed no advantage in earnings or employment rate over persons who had been admitted to the Job Corps but chose not to come. They also reported, in their favorable treatment of Job Corps, both its impressively high placement rates and the reasons why they are somewhat inflated. Ellard (1974) found no advantage for Neighborhood Youth Corps participants in Houston in school attendance or income and that youth working without benefit of Neighborhood Youth Corps demonstrated more personal qualities likely to serve them well in the work force than program participants. Findings of the Comptroller General's evaluations of both the in-school (1973) and out-of-school (1974) Neighborhood Youth Corps programs can be interpreted as demonstrating either failure or the need to improve basically sound programs depending on one's point of view.

The most thoroughly evaluated recent experiential learning program is Experience Based Career Education (EBCE). Sponsored by the National Institute of Education, EBCE has been implemented in many school systems across the country according to the specifications and with technical assistance from four regional educational laboratories, each of which has established a somewhat distinctive approach. Each of the laboratories has also conducted evaluations of their own programs (Shively and Watts, 1977; Biester, Blair, and Kershner, 1977; Owens, 1977; Spotts and Evenson, 1977) and the Educational Testing Service has conducted an evaluation of all four models (Watkins and Corder, 1977). The findings from these extensive studies show: 1) that EBCE is extremely popular, winning strong support from students and former students, their parents, and the adults in the learning settings where students are placed; 2) that EBCE students show no losses in academic achievement measured by standardized tests when compared to students not in the program; and 3) that some differences are found between EBCE and non-EBCE students in knowledge of and attitudes toward careers, favoring the EBCE group.

The first two findings should not be slighted. The first is related to the first level of measurement but also to the second since teachers, parents, and workplace supervisors acted, in part, as evaluators of the program's effects. The second finding, that EBCE participants did not fall behind in their acquisition of basic skills, is consistent with studies showing that different forms of instruction have similar results (Stephens, 1967; Olson, 1972), but it is particularly noteworthy given that many EBCE participants spent no time at all in classrooms during an entire school year. The extent of conventional classroom study varied from program to program, but many programs dealt directly with academic subjects only in tutorials and independent studies. This finding should relieve fears that increased emphasis on experiential versus classroom learning will necessarily interfere with the learning of basic skills.

The third finding, however, is the most interesting, because it concerns the distinctive purpose of career education. The evaluation study of the Northwest Regional Laboratory approach (Owens) showed some program-related differences between EBCE and non-EBCE students by asking questions specifically about features of the program. For example, EBCE students were more likely to say they had had firsthand experience in a job site and to know personally someone in a career they were interested in than non-EBCE students, and they were more likely to have performed certain tasks included in an inventory of "survival skills." The Far-west Laboratory's study (Spotts and Evenson), in contrast, used instruments that were not designed specifically for EBCE and discovered no consistent differences. One instrument, for example, assessed general knowledge of 200 different careers, while EBCE is designed to teach in detail about just a few careers, and EBCE participants understandably demonstrated no advantage.

The Educational Testing Service (ETS) study (Watkins and Corder) found that EBCE students had more positive attitudes toward career planning and more knowledge about different careers. ETS evaluators judged EBCE students better respondents to open-ended interview questions, saying they were more concise and

able to speak more easily with an adult interviewer than non-EBCE students. And they found EBCE students talked more about long-range factors in career choices than non-EBCE students, whose reasons for being interested in certain careers were more likely to be short-range, such as starting salary and current job market conditions. These findings suggest that EBCE has some value, but they do not constitute a strong case for its efficacy.

The most disappointing aspect of the EBCE evaluations is not the limitations on their findings but their failure to address even more important issues. Although the purpose of the evaluations was presumably to demonstrate the effectiveness of a particular approach to career education, an experiential approach, all the comparisons made in the studies are between Experience Based Career Education and no career education. What findings they provide, therefore, say absolutely nothing about the key question of what experiential learning has to contribute to career education. This awesome lacuna was not entirely an oversight. The original design for the ETS study included a comparison group of students enrolled in classroom career education and conventional vocational education programs. Resistance from EBCE and NIE staff, however, forced the elimination of that aspect of the study. It is not difficult to imagine the reasoning behind such resistance: if EBCE came out "behind" then the program staff would look bad and face the loss of their positions; if it came out "ahead," their colleagues would be likely to become resentful competitors. Such are the realities of evaluation research, but in the absence of comparisons among treatments, no conclusions are warranted about the relative efficacy of a particular treatment.

The second unanswered question is even more fundamental: what difference does it make to a person at age thirty that he or she learned certain facts and adopted certain attitudes about careers at age seventeen rather than age nineteen or twenty-three? The entire career education movement is based upon the unexamined assumption that increased knowledge about careers and the formation of

certain positive attitudes toward careers before entering the job market have significant beneficial effects on career patterns, job satisfaction, and productivity. This may be true but it is not immediately obvious that it should be and there is no empirical evidence to either confirm or disconfirm it, as far as I know.

Summary of Program Evaluations

A brief review of selected evaluations of experiential learning programs has revealed that the best studies, in terms of their place on the four-level hierarchy presented above and their value to program designers and policy makers, were done 15 or more years ago on programs whose characteristics prevent generalization to the range of programs that might be offered to secondary school age youth. More recent studies have tended to rely on a few paper-and-pencil measures of outcomes and their designs have precluded inferences regarding the aspects of the programs that are associated with their effects.

Recommendations for Future Research

Much research remains to be done if the potential benefits of experiential learning are to be made available more systematically. We need to know what effects various forms of experiential learning are likely to have on particular types of learners. That is, we need to know more about what different classes of youth need and how they respond to various opportunities and we need to know more about the dynamics and outcomes of a range of experiential learning programs.

The quest for such knowledge is endless. Studies assessing the effects of experiential learning can be no more conclusive than studies in other realms of educational evaluation and social science. The purpose of more studies is not to answer all the questions that can be raised but to provide additional evidence upon which considered judgments can be made (Cohen and Garet, 1975). Further work in instrument development and evaluation design seems particularly promising in this light.

The goal of such work, the orientation of the following recommendations, is to move upward in the hierarchy of evaluation: from assessing participants' responses, to gathering corroborative evidence of a program's effects, to establishing the program's contribution to those effects, to specifying the program features associated with certain effects. The point of striving for higher levels of evaluation is that each successive level offers greater understanding of what can be expected of experiential learning and who will be most likely to benefit.

After making this point, I should note that the recommendations I make for evaluation studies of experiential learning programs far exceed the standards now met by studies of conventional classroom instruction. There is not a solid empirical base for choosing one form of classroom instruction over another or even for assuming that classrooms are appropriate settings for learning. It is unfair but true that alternative approaches to education are required to prove their effectiveness while conventional approaches are not.

Instrument Development

I propose a moratorium on the creation and use of paper-and-pencil instruments until more valid measures can be devised and then used to validate new or existing paper-and-pencil instruments. Development, as defined by Bronfenbrenner (in press) and by Dewey before him, has to do with the increasing capacity of a person to act in and act upon the environment. Understanding, as Dewey explained so well (1916), is bound up with such action, both as antecedent and consequence. Paper-and-pencil measures have demonstrated little power in assessing a person's ability or motivation to understand and act (Hartshorne and May, 1928; Mischel, 1968). The ideal measure of experiential learning effects would be closely associated with actual behavior and would also reveal effects that endure over time and are visible in settings other than the experiential learning program. Two sorts of measures seem more promising, developmental interviews and

observations.

By "developmental interviews" I mean interviews designed to assess changes in the ways in which people understand the world around them. The best model for secondary school-age youth is Kohlberg's interviews to assess moral development (Kohlberg and Gilligan, 1971). The key is that these interviews are used to discover how people think about things rather than what they think. Changes in how people think can be assumed to have important consequences that extend beyond the setting in which they occurred.

Methods of eliciting statements that reveal such changes might include the use of anecdotes like Kohlberg's, but other stimuli are also possible. Visual stimuli such as those used in thematic apperception tests are a possibility. Steinitz and her colleagues used relatively open-ended interviews to infer the political idealogies of youth (1973, 1976). (See also Adelson, 1971.) Luria (1976) adapted his clinical interviewing skills to suit the conversational style of Asian peasants, asking riddles, for example, which was a customary form of entertainment, and found that those who had participated in collective decision-making demonstrated more advanced cognitive skills than those whose village politics had not yet been transformed by the Russian Revolution.

Watkins and Corder's (1977) finding that participants in EBCE were better able to respond to interview questions is one example of the kind of data that could be collected using such interviews. Since this was an unexpected finding, they should not be criticized for making no more of it, but it would have been even more impressive if they could have demonstrated that EBCE participants' interview skills held up when they talked about topics unrelated to careers and in situations where EBCE was not salient.

Direct observation of behavior offers the most convincing evidence of effects. Perhaps because it is such a costly form of data collection, observation has usually been used only to provide data regarding processes. But if outcomes are stated behaviorally, observation of behavior is the most valid

possible means of measuring outcomes. Observation could profitably be employed in three settings, the experiential learning program itself, simulations designed to elicit behaviors of interest, and "natural" settings, particularly the home, school, and workplace.

Systematic observation of experiential learning programs could be invaluable in illuminating the properties of those programs (Mehan, 1978), but it could also document program effects. If increased ability and motivation to act cooperatively is a program goal, then cooperation could be operationally defined and instances counted. An increasing frequency of cooperative behavior would then testify to the attainment of the goal.

The limitation on such a finding would be that increased cooperation within the program may not carry over into other situations. An efficient means of checking the extent of carryover or diffusion would be to create artificial situations, simulations, in which cooperative behavior could be assessed. Trainers in human relations have devised a number of simulations that might be useful for such purposes (Pfeiffer and Jones, 1973-1977). Breer and Locke (1965) employed some similar exercises, such as building structures with toy construction sets and solving word problems, to induce changes in attitudes on the basis of task experience. Their work not only provides examples of simulations but reinforces the belief that experiential learning can have powerful effects. A large number of educational games is also available (Zuckerman and Horn, 1973), some of which could be used to assess the acquisition of new social or problem-solving skills.

The validity of assessments based on behavior in simulated situations would have to be established by determining the association between that behavior and behavior in "natural" or real life situations. Effects of experiential learning programs that were demonstrated at home, in school, and in the workplace would be the most convincing possible. They would also be the most difficult to find. Given the obtrusiveness of observation in natural settings and the expense entailed in both collecting and analyzing such data, it is unrealistic to propose extensive observation in these settings. It would be useful to have some done, though, in

order to validate more economical instruments.

The knowledge of those who observe young people in the course of their work in such settings could be exploited for this purpose. Teachers, parents, and other adults could be asked to assess the behavior of youth in the settings where they see them and those indirect observations used to evaluate the effects of experiential learning. Validity and reliability are clearly difficult to establish for measures of this type. A first point to consider is that it may be more important that adults perceive positive changes in young people than that those changes actually occur. Therefore, the perceptions of behavior by important adults are significant data regardless of their validity.

However, it may be possible to achieve acceptable validity and reliability by defining carefully the behavior of interest, specifying the conditions under which it might occur, and asking for very specific assessments, number of instances per day, for example, rather than only for summative judgments. Outside observers could be employed to check the accuracy of such observations.

Research Design

The recommendations I have to make regarding research design have to do with evaluation research. But the evaluation of experiential learning programs is not the only avenue to increased knowledge about the effects of experiential learning. People learn without programs, and efforts should be made to determine what sorts of things are learned "incidentally" and how that learning occurs. Research on the conditions under which development occurs would be most useful to the designers of experiential learning programs and their evaluators.

My first recommendation is that evaluations of experiential learning should be designed as experiments. This suggestion is really a restatement of the recommendations made by the Panel on Youth (1974). A nuance that many of the critics of that report missed (see School Review,vol.83,no.1,1974) is that the Panel recommended "socia

experiments or pilot programs with evaluation" (p. 150) rather than wholesale restructuring of secondary education. The Panel's suggestions reflect the caution of the '70's while most of its critics responded as if a large-scale program reminiscent of the '60's had been proposed. No convincing arguments have been advanced against the suggestion that pilot programs and experiments be instituted to investigate the contributions that could be made by experiential learning to the transition of youth to adulthood.

The purpose of experimentation of this kind is "to maximize one's sensitivity to phenomena through the juxtaposition of the similar but different" (Bronfenbrenner, 1977). The experiment is used for heuristic purposes, in the spirit of what Bronfenbrenner termed Dearborn's Dictum, "If you want to understand something, try to change it." Experiments may be either "contrived" or "natural." The contrived experiment is the most common, but it has usually been performed in laboratory settings. A natural experiment is simply the exploitation of a contrast occurring for reasons other than experimental manipulation. Hypotheses are useful as heuristic devices in these types of experiments but not necessarily to formulate laws or establish causal relations. (See also Kelman, 1968, chap. 6.)

My second recommendation is that experiments in experiential learning be contrived, in the sense that programs are developed specifically for the purpose of evaluating them. The disappointing gap between the design of the ETS evaluation of EBCE (Watkins and Corder, 1977) and what was actually accomplished illustrates the difficulty of conducting experimental evaluations of already existing programs. The problem is not only a practical one of convincing program personnel to cooperate with a study but an ethical one of conducting scientific inquiry without treating people as objects (Kelman, 1968). There is an additional problem bound up in the ethical issue, which is that people who feel they are being manipulated are not likely to provide valid data (Argyris, 1970, chap. 4).

The dilemma involved in conducting experiments with educational programs leads to my third recommendation, which is that researchers and program staff work together to plan experiential learning programs that can be evaluated experimentally. Ideally youth and parents would also be involved in such planning. This is the most promising approach to providing researchers sufficient control that they can begin to identify what program properties are associated with particular effects.

These recommendations apply best to the types of programs evaluated in the studies reviewed above, all of which have rather specific objectives. They are specific relative to the objectives of some other experiential learning programs anyway. Many programs have objectives that are as broad as those for education in general, and their structures give participants great latitude in deciding just what they will do. When these programs serve diverse populations, the likelihood that program outcomes will be sufficiently uniform to be measurable when aggregated is considerably reduced.

For example, I have studied a program, the Learning Web, that matches young people with adults who have a skill to teach that the young people want to learn. Participants range from junior high school to college age, from school dropouts to students who do their school work so easily that they are bored and seek a challenge. A fourteen-year-old boy serves as an apprentice in a hog barn and a seventeen-year-old girl works with an electronic music ensemble. On what basis would a common outcome be predicted for these two program participants? Although both might be powerfully affected by the program, and in fact their parents claim they have been, the program's effects on different participants are not necessarily measurable on the same scale.

Evaluation of the effects of experiential learning programs like this one, with broad aims and diverse participants, may require different strategies. It may never be possible to surpass the third level of evaluation defined above and the second may remain the most common. Evidence can, however, be gathered

to support the assertion that such programs are effective but in different ways. ways. A potentially more rigorous strategy suggested by Osipow (1978) in connection with career education programs, which are actually narrower in their aims, is stating objectives for each participant that can be evaluated and basing judgments about the program on the total number or proportion of objectives met. Two problems with this strategy are that evaluations of whole programs might be determined largely by the ability of staff members to predict effects accurately and that there is no simple means of evaluating the objectives. A program that achieves hundreds of trivial objectives may in fact be less valuable than one that accomplishes a few important ones.

Questions for Research

My recommendations have dealt primarily with the design and methods of future studies, but the questions to be asked by research properly determine the designs and methods employed. With the fourth level of evaluation as a target, I would suggest as a general orienting question for future evaluations of experiential learning programs the following: "What effects do various forms of experiential learning program have on particular kinds of learners?" No single study could answer such a broad question, and the small-scale studies from which to synthesize an answer are not yet available.

In order to progress in this direction, there must be classification schemes for experiential learning programs and for learners. I have set out elsewhere six characteristics that distinguish programs from each other (Hamilton, 1978). But to be useful, a typology must be simpler. I would propose that a key distinction is between programs that involve young people in adult-directed activities and those in which young people work with each other to achieve goals they set for themselves. The difference between working primarily with adults in adult settings and working primarily with youth on activities that would not take place if youth did not do them seems likely to be important.

Learners may be distinguished in equally numerous ways. Sex, race, socio-economic status, age, level of development in terms of cognition, moral reasoning, and ego are among the obvious categories. But the most important distinction, which these categories affect very strongly, may well be school performance. Students who perform well probably bring different needs and abilities to experiential learning programs than those who do not. If experiential learning programs are viewed as complementary to school learning, then this distinction is crucial to assessing the contributions such programs can make to education.

Summary and Conclusions

Efforts to assess the effects of experiential learning programs can be aimed at four different levels: participant opinions about the programs; external evidence of program effects, which might take such forms as testimony from staff, parents, or experts, and scores on formal instruments designed to measure knowledge, skills and attitudes; evidence indicating what aspect of the program is associated with what effects. Available studies of citizenship education/character development programs and of work experience/career education programs approach level three at best and most may be classified at level two, providing insufficient data for policy choices about the potential contribution of experiential learning programs to education or for planners to design optimal programs.

Future research needs to move toward the fourth level, relating specific characteristics of programs to effects. Better instruments are required for this purpose, particularly observation instruments and "developmental interviews." Experimental designs are also required. The creation of programs for experimental purposes is recommended.

Experiential learning has great potential as a means of enriching the education of youth. There is some evidence that it has strong positive effects, but not enough to justify massive allocations of resources to it. The paucity of

evidence results primarily from the weaknesses of current instruments and designs for evaluating experiential learning programs rather than from a dearth of such programs. New measures and careful studies of a variety of experiential learning programs are needed in order to determine what effects different forms of experiential learning have on particular kinds of youth.

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